UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address : COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
07/322,604	03/10/89	STREBER	W SCH922

EXAMINER: ULM, J

ART UNIT	PAPER NUMBER
1812	9

DATE MAILED: 11/26/91

MILLEN, WHITE, AND ZELANO, P.C.
ARLINGTON COURTHOUSE PLAZA I
SUITE 1201
2200 CLARENDON BOULEVARD
ARLINGTON, VA 22201

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined ☐ Responsive to communication filed on 9-9-91 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☒ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 10 to 53 are pending in the application.
   Of the above, claims 10-16, 19-22, 24-31, 34, 36-41, & 44 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☑ Claims 17, 18, 23, 32, 33, 35, 42, 43, & 45-53 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 9-89)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 10 to 44 and newly submitted claims 45 to 53 are pending in the instant application with claims 1 to 9 having been canceled as requested in Paper Number 8.

Claims 10 to 16, 19 to 22, 24 to 31, 34, 36 to 41, and 44 stand withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed in Paper No. 8. Claim 33 was drawn to a non-elected invention in the first office action but has been amended to read upon the elected invention and is therefore being treated on the merits in this office action as if it was a newly submitted claim.

Applicant's election with traverse of the Invention of group I, claims 1 to 9, 17, 18, 23, 32, 35, 42, and 43 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that a search of the art pertinent to the claimed inventions would be overlapping. This is not found persuasive because a search of the art as applicable to recombinant DNA techniques as needed for an examination of Invention I would not be coextensive with a search of the mutagenesis art that would be required for the examination of Invention II or the microbial physiological art as pertains to Invention III. Applicant is correct in stating that these searches would be overlapping, but by no means would they be coextensive. Since such a search would place an undue burden

on the PTO the requirement is still deemed proper and is therefore made FINAL.

Applicant's arguments filed 9 September of 1991 have been fully considered but they are not deemed to be persuasive.

Claims 23, 32, 35, 42, and 43 stand rejected, newly amended claim 33 and newly submitted claims 45, 48, 51, 52, and 53 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons of record. Applicant has traversed this rejection because "the disclosure provides ample enablement for isolation of 2,4-D monooxygenase [genes] from a large number of sources and by several methods". This is true, but, these claims read on all 2,4-D monooxygenase genes from any and all sources for which adequate enablment is lacking. The specification is limited to methods applicable only to genes able to hybridize to those sequences disclosed in the instant specification or, at best, those sequences isolatable from bacteria able to use 2,4-D as a sole carbon source, which would undoubtedly exclude organism able to use 2,4-D as an ancillary carbon source.

Claims 18, 35, and 46 are newly rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 18 and 35 are incorrect in that they both depend from canceled claims. Claim 46 is indefinite in claiming "a sequence hybridizable therewith" which places no functional or size limits on said DNA and is

inherently indefinite. Such a claim would be rejectable under 35. U.S.C. § 102 as being anticipated by any restriction endonuclease sequence contained therein.

Claims 1 to 8, 17, 23, 32, 42, and 43 were rejected in the first office action as being obvious over the Amy et.al. publication in view of the Beguin et.al. publication and claims 9, 18, and 35 were rejected as obvious in further view of the Carey et.al. patent. These claims were originally draw to a 2,4-D monooxygenase gene in pure form. Claims 1 to 9 have now been canceled and claims 17, 23, 32, 42, and 43 have been amended to claim a 2,4-D monooxygenase gene operably linked to a heterologous plant promoter which substantially changes the scope of these claims and makes necessary new grounds for rejection.

Claims 18 and 35 stand rejected under 35 U.S.C. § 103 as unpatentable over the Amy and Beguin references in view of the Carey patent for reasons of record. Applicant's traversal of this rejection is based on claims drawn to a recombinant 2,4-D monooxygenase gene coupled to a heterologous plant promoter. The rejection of these claims, which are drawn to a plasmid containing a 2,4-D monooxygenase gene and microorganism transformed therewith, was not traversed in Paper Number 8.

Claims 17, 23, 32, 33, 42, 43, and 45 to 53 are rejected under 35 U.S.C. § 103 as being unpatentable over the Amy et.al. and Beguin et.al. references in view of the Comai et.al. publication (2R, newly cited). These claims are drawn to a

recombinant gene comprising a heterologous plant promoter coupled to a sequence encoding a 2,4-D monooxygenase, a vector containing this gene , and a plant containing such a vector. The Amy reference clearly describes the construction of the plasmid PSA122 containing a 2,4-D monooxygenase gene from an aquatic bacteria that is phenotypically similar to Alcaligenes eutrophus. The 2,4-D monooxygenase gene described in the Amy reference differs from that claimed in the instant invention in the degree of definition and refinement of the cloned gene and the claimed use. The Beguin reference is used here to show that the subcloning and sequencing of a cloned gene was a routine procedure in the art of molecular biology at the time the instant invention was made. In light of the Amy and Beguin references one of ordinary skill would have found an isolated gene encoding a 2,4-D monooxygenase from an aquatic bacteria to be fairly taught at the time of the instant invention. These references do not teach the expression of this gene in a plant as claimed. The Comai et.al. publication shows that the isolation of a potential herbicide resistance gene from a bacteria and the subsequent insertion of that gene, coupled to an appropriate plant promoter, into the chromosome of a plant so that plant would be rendered resistant to the detrimental effects of said herbicide was known in the art prior to the time the instant invention was made. To use the methods as described in the Comai reference to transfer the 2,4-D monooxygenase gene described in the Amy reference into

a plant to render that plant resistant to the detrimental effects of 2,4-D would have been obvious to one of ordinary skill at the time of the instant invention. The Comai reference clearly indicates that the critical parameters involved in transferring into and expressing a bacterial gene in a plant genome were well known at the time the instant invention was made.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a). The practice of automatically extending the shortened statutory period an additional month upon the filing of a timely first response to a final rejection has been discontinued by the Office. See 1021 TMOG 35.

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

This application contains claims 10 to 16, 19 to 22, 24 to 31, 34, 36 to 41, and 44 drawn to an invention non-elected with traverse in Paper No. 8. A complete response to the final rejection must include cancellation of non-elected claims or other appropriate action (37 C.F.R. § 1.144) M.P.E.P. § 821.01.

The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1812.

Any inquiry concerning this communication should be directed to John D. Ulm at telephone number (703) 308-4008.

J.D.U.

GARNETTE D. DRAPER
PRIMARY EXAMINER
ART UNIT ~~180~~ 1812